# REMARKS

**[0001]** Applicant's attorney respectfully requests reconsideration and allowance of all of the claims of the application. Claims 1-12 and 24-27 are presently pending.

## Formal Request for an Interview

**[0002]** If the Examiner's reply to this communication is anything other than allowance of all pending claims, then I formally request an interview with the Examiner. I encourage the Examiner to call me—the undersigned representative for the Applicant—so that we can talk about this matter so as to resolve any outstanding issues quickly and efficiently over the phone.

**[0003]** Please contact me to schedule a date and time for a telephone interview that is most convenient for both of us. While email works great for me, I welcome your call as well. My contact information may be found on the last page of this response.

## Allowable Subject Matter

**[0004]** Applicant would like to thank the Examiner for allowing claims 2 and 24-27. These claims have not been amended herein, and therefore are now allowable.

# Substantive Matters

## Claim Rejections under § 103

**[0005]** The Examiner rejects claims 1, 3-5 and 6-12 under § 103. For the reasons set forth below, the Examiner has not made a *prima facie* case showing that the rejected claims are obvious.

**[0006]** Accordingly, Applicant's attorney respectfully requests that the § 103 rejections be withdrawn and the case be passed along to issuance.

**[0007]** The Examiner's rejections are based upon the following references in combination:

- **Japanese Patent No. JP61-266069 to Masahiro et al:** *"Masahiro"* hereinafter, (issued November 25, 1986);
- **US Patent No. 6,529,363 to Waffenschmidt et al: "***Waffenschmidt"* hereinafter, (published March 4, 2003); and
- **Applicant's Admitted Prior Art: "***AAPA"* hereinafter.

# Obviousness Rejections

## Lack of *Prima Facie* Case of Obviousness (MPEP § 2142)

**[0008]** Applicant disagrees with the Examiner's obviousness rejections. Arguments presented herein point to various aspects of the record to demonstrate that all of the criteria set forth for making a *prima facie* case have not been met. To establish *prima facie* obviousness of a claimed invention, all of the claim recitations must be taught or suggested by the prior art[1] and "all words in a claim must be considered in judging the patentability of that claim against the prior art."[2] Further, if prior art, in any material respect teaches away from the claimed invention, the art cannot be used to support an obviousness rejection.[3] Moreover, if a modification would render a reference unsatisfactory for its intended purpose, the suggested modification / combination is impermissible.[4]

## Based upon *AAPA* and *Masahiro*

**[0009]** The Examiner rejects claims 1, 4 and 6-10 under 35 U.S.C. § 103(a) as being unpatentable over *AAPA* and *Masahiro*. Applicant's attorney respectfully traverses the rejection of these claims and asks the Examiner to withdraw the rejection of these claims.

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[1] *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)

[2] *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)

[3] *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed Cir. 1997)

[4] See MPEP § 2143.01

*Independent Claim 1*

**[0010]** Applicant's attorney submits that the combination of *AAPA* and *Masahiro* does not teach or suggest all of the elements as recited in this claim. In specific, claim 1 recites a common mode line connected in series with a capacitor, such that the $\lambda/4$ lengths of the sections are chosen to correspond to a central frequency greater than a desired central frequency for the transformer.

**[0011]** For example, referring, *e.g.*, to FIG. 3 and paragraphs [26]-[32] of the present application, a mode-switching transformer 10 comprises a first line (sections 5' and 6') in common mode and a second line (sections 7' and 8' and junction point 9) in differential mode, wherein the common mode line is connected in series with a capacitor C. Because the capacitor C is specifically used to lower the central frequency of the bandwidth of the transformer, the sections 5', 6', 7', 8' may be sized for higher operating frequencies. As a result, the sections 5', 6', 7', 8' may be shorter in length, and thus, the size of the transformer and the insertion losses may be reduced. Thus, the capacitance of the capacitor affects the length of common mode windings and vice versa.

**[0012]** The Examiner correctly acknowledges that *AAPA* does not teach anything with respect to a capacitor. However, *Masahiro* also does not provide any teaching of a capacitor coupled to a common mode winding such that the length of the common mode winding corresponds to the value of the capacitor as recited in claim 1. Instead, *Masahiro* simply discloses a switching power source circuit having a power transistor 4. The collector of the power transistor 4 has a ground (parasitic) capacitance 30 that introduces a common mode noise to the

circuit. In order to reduce this common mode noise, "the ground capacity of the collector of the transistor 4 is cancelled by inserting the capacitor 40" (Constitution of *Masahiro*). In other words, the capacitor 40 is only necessary to reduce the common mode noise caused by the collector of the power transistor 4. It should be noted that the capacitor 40 has nothing to do with the transformer 2 itself. The capacitor 40 is only inserted to cancel the parasitic capacitance 30 of the power transistor 4. If the switching power source circuit of *Masahiro* did not include a power transistor 4, then it would not include a capacitor 40 because there would simply be no parasitic capacitance to cancel. As a result, the only motivation to add a capacitor 40 to a switching power source circuit is if the circuit already includes a power transistor 4.

**[0013]** However, the mode-switching transformer of the present application does not include any power transistor. There is no power transistor of any kind in *AAPA* or the present application that has a parasitic capacitance that requires cancelling. As a result, there is no motivation whatsoever to combine *AAPA* with *Masahiro*, because the capacitor 40 from *Masahiro* would have no corresponding parasitic capacitance 30 in *AAPA* to cancel.

**[0014]** Furthermore, *Masahiro* actually teaches away from adding a capacitor 40 to a switching power source circuit without a corresponding power transistor 4. The parasitic capacitance 30 in the power transistor 4 adds common mode noise to the circuit in *Masahiro*. Without a capacitor 40 to offset the parasitic capacitance 30, the common mode noise added by the power transistor 4 remains in the circuit. In other words, *Masahiro* specifically teaches that adding one capacitance without another capacitance to cancel it increases common

mode noise in the circuit. As a result, combining the capacitor 40 from *Masahiro* to the mode-switching transformer of *AAPA* would actually increase the noise in the circuit (not reduce the noise) because *AAPA* does not include any power transistor. This is exactly opposite to the intended purpose of *Masihiro*.

**[0015]** Additionally, the teachings of *Masihiro* are clearly directed to a switching power converter. As is well known in the art, a switching power converter is very different from that of a mode switching transformer (balun) as recited in claim 1. One purpose of a balun is to convert differential mode signals into common mode signals and conversely. Quite differently, a switching power source, such as that of *Masahiro*, is a DC-DC converter for power supply purposes.

**[0016]** Moreover, Applicant's attorney submits that the Examiner is using hindsight reasoning. Without any specific teaching in Masahiro about common mode windings, differential windings or central frequencies, it stands to reason that *Masahiro* uses its capacitor 40 for entirely different reasons, *i.e.,* to reduce common-mode noise by canceling the parasitic capacitance 30 of the power transistor 4. Reducing common mode noise by canceling a parasitic capacitance is not a concern of the recitations of claim 1 and this is evidence that the Examiner is using hindsight reasoning. As a matter of law, obviousness may not be established using hindsight obtained in view of the teachings or suggestions of the applicants.[1] To guard against the use of such impermissible hindsight,

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[1] *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1551, 1553, 220 USPQ 303, 311, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

obviousness needs to be determined by ascertaining whether the applicable prior art contains any suggestion or motivation for making the modifications in the design of the prior art article in order to produce the claimed design. The mere possibility that a prior art teaching could be modified or combined such that its use would lead to the particular limitations recited in a claim does not make the recited limitation obvious, unless the prior art suggests the desirability of such a modification.[1]

**[0017]** Therefore, the combination of *AAPA* and *Masahiro* does not teach or suggest all of the elements and features of this claim. Accordingly, Applicant's attorney asks the Examiner to withdraw the rejection of this claim.

*Dependent Claims 4 and 6*

**[0018]** These claims ultimately depend upon independent claim 1. As discussed above, claim 1 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

*Independent Claim 7*

**[0019]** Applicant's attorney submits that the combination of *AAPA* and *Masahiro,* does not teach or suggest all of the elements as recited in this claim.

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[1] *See In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

The Examiner correctly acknowledges that *AAPA* does not teach a capacitor as recited in this claim. Applicant's attorney submits that *Masahiro* also does not remedy these deficient teachings for at least similar reasons as discussed above with respect to claim 1. For at least similar reasons, Applicant's attorney submits that no permissible combination of the prior art of record teaches or suggests the recitations of this claim. Accordingly, Applicant's attorney asks the Examiner to withdraw the rejection of this claim.

*Dependent Claims 8-10*

**[0020]** These claims ultimately depend upon independent claim 7. As discussed above, claim 7 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

**Based upon *AAPA, Masahiro and Waffenschmidt***

**[0021]** The Examiner rejects claims 3, 5 and 11-12 under 35 U.S.C. § 103(a) as being unpatentable over *AAPA, Masahiro and Waffenschmidt*. Applicant's attorney respectfully traverses the rejection of these claims and asks the Examiner to withdraw the rejection of these claims.

*Dependent Claims 3, 5 and 11-12*

**[0022]** These claims ultimately depend upon one of independent claims 1 or 7. As discussed above, claims 1 and 7 are allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

## Conclusion

**[0023]** All pending claims are in condition for allowance. Applicant's attorney respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the **Examiner is urged to contact me before issuing a subsequent Action**. Please call or email me at your convenience.

**[0024]** Any additional fees required as a result of this amendment have been paid from the below-referenced deposit account as filed herewith. Should further payment be required to cover such fees you are hereby authorized to charge such payment to Deposit Account No. 07-1897.

Respectfully Submitted,

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Representatives for Applicant

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